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Facing up to the challenge: why is it so hard to develop graduate attributes?

Debate continues regarding the nature and desirability of graduate attributes, driven partly by stakeholder expectations that universities will prepare employees for the knowledge economy, and partly by higher education academics and learning specialists. While universities appear to have accepted their new vocational role, there is considerable confusion over how these things – graduate skills, attributes or capabilities - should be defined and implemented. Conceptual confusion, combined with a range of external pressures and internal management issues have the potential to derail this important project. To date, stakeholders such as government and business, as well as universities have seriously underestimated the kind of cultural, institutional and policy changes required to implement the graduate skills agenda. This paper outlines the issues that will need to be addressed by the higher education sector if universities are to play a proactive rather than reactive role in shaping the graduate attributes agenda.

Keywords: employability; graduate attributes; graduate outcomes; generic skills; implementation

Introduction

On the surface at least, universities in Australia, and elsewhere, appear to have accepted their role as educators of knowledge workers, professionals and citizens capable of marshalling ever-expanding flows of information. Yet the question of what part graduate attributes play in the fulfilment of this new role remains a vexed one. The reasons for this are complex. A lack of conceptual clarity about what we mean by terms such as 'attributes', 'skills' and the like, is well documented. So too are differences in the way we conceive graduate attributes, and the impact this has on the way relevant teaching strategies are designed, implemented and taught (Barrie, 2004; Barrie, 2006; Moore, 2004). Yet equally serious for academic staff charged with the project of developing them is the problem of conceptualising, implementing, and assessing graduate attributes within particular disciplinary contexts, for particular existing degree structures, and in relation to each other. Current environmental and institutional factors also make the task challenging: these include increased student numbers and the impact this has on teaching practices, the casualisation of front-line teaching staff and, finally, the way we measure and reward good teaching itself. For this reason, while we are strong advocates of the graduate attributes project, we argue that stakeholders such as government, business, and universities themselves, have grossly underestimated the changes needed for universities to give substance to the graduate skills agenda.

Context

The focus on graduate skills in higher education has its origins in global trends of increasing vocationalism, mass education, marketisation and the resultant increase in competition between universities both here and abroad. The increasingly vocational role of universities has led to a concern for acceptable employability and professional outcomes for university graduates by external stakeholders, including government and business. Together, these trends have driven the graduate skills agenda in Australia and elsewhere, notably Great Britain and the US. However, the focus on graduate skills itself signals a broader debate over the role of higher education (B-HERT, 2003). There is an increasing convergence of opinion around the proposition that universities must now do more for their students than simply transmit disciplinary content.

Various concepts have been invoked to articulate this aspiration, ranging from that of the 'lifelong learner' (Boud, 2000) and a concern for developing students' capacity to judge their own academic and professional performance, to that of graduate attributes and/or skills (Barrie, 2004; Moore, 2004; Kirkpatrick & Mulligan, 2002), the 'knowledge society' (Candy, 2000) and 'mode 2 knowledge' (Barnett, 2000; Smith & Riley, 2003). While all these concepts are driven, to some extent, by external stakeholder expectations concerning employability and changing professional requirements, there is also an argument that is more central to the traditional role of the university as both custodian and creator of knowledge. Various commentators (Candy, 2000; Barrow, 2004; Boud, 2000) have made the observation that in a 'knowledge society', or an age of 'supercomplexity' (Barnett 2000), university teaching practices must change if they are to facilitate the development of capable citizens who can negotiate its inevitable uncertainties (DEST 2005).

Universities have responded with a range of policies and projects aimed at fulfilling this new role. When the development of graduate attributes statements became a condition of government funding a few years ago (Barrie, 2005), all Australian universities, at the very least, published statements of graduate attributes on their websites. In spite of the speed with which universities responded to the government's graduate attributes agenda at a policy level however, the implementation and uptake of effective initiatives has remained 'patchy' (Barrie, 2005; Barrie, 2006). At best, many universities have produced 'curriculum maps', which show areas of graduate skills or attribute development within existing curricula (Barrie, 2005; Hager, Holland & Beckett, 2002), but as Sumsion and Goodfellow (2004) point out, such curriculum mapping has the potential to foster superficial and ineffective approaches to the development of graduate attributes.

Some universities have gone further, by attempting to articulate and implement various combinations of graduate attributes or skills (Barrie, 2004), academic literacies (Kirkpatrick & Mulligan, 2003), Work Integrated Learning (WIL) and peer/self-assessment learning and teaching strategies (Boud, 2000). Despite, or because of, these numerous initiatives however there appears to be considerable confusion over how graduate attributes should be defined, what these attributes look like within each discipline, how they should be taught, assessed and evaluated, and how their adoption should ultimately shape teaching practices in higher education. Confronted with such confusion, the Department of Education, Science and Training (DEST 2005) and employer groups (ACCI, 2002; BCA, 2006) are calling for a more consensual and systematic approach to developing graduate attributes.

In spite of this mounting pressure to demonstrate their ability to deliver on graduate outcomes (Chanock, Clerehan, Moore & Prince, 2004), many universities continue to fall short on two counts: firstly, they have yet to develop teaching and learning strategies, that are appropriate for developing graduate attributes within disciplinary contexts, and secondly, they need to provide evidence of their achievement of these outcomes through the application of appropriate criteria and standards (Barrie, 2005). In short, Australian universities have yet to ensure an 'alignment between what is espoused, what is enacted (through the curriculum) and what students experience and learn' (Bath, Smith, Stein & Swann, 2004, p.318). While higher education scholars (Barrie, 2005; Barrie, 2006; Chanock, 2004) quite rightly argue that the lack of

conceptual clarity has stymied the graduate attributes agenda, we argue that a range of additional factors, both within and beyond the control of individual institutions, have also contributed to the problem. Each of these factors is discussed in some detail below.

A lack of conceptual clarity

For some time now, researchers (Barrie, 2005; Barrie, 2006; Moore, 2004; Clanchy & Ballard, 1995) have argued that problems of implementation ultimately stem from the theoretically nebulous nature of the graduate attributes agenda. The variety of terms used by policy writers, often interchangeably, to describe desirable graduate outcomes is indicative of this confusion. Adjectives such as 'generic', 'core', 'key', 'enabling', 'transferable' and 'professional' are used in tandem with nouns such as 'attributes', 'skills', 'capabilities' or 'competencies', to name just a few. All of these terms, and more, can be found within the lists of desired graduate outcomes on university websites, which cover anything from technical skills, such as 'communication technology skills' (Murdoch University), to higher order attributes, such as the ability to engage in 'research and enquiry' (University of Sydney). Such lists also include values among the list of desirable outcomes; for example, 'to value and respect differing views' (University of Canberra). Yet, higher education researchers (Barrie, 2005; Chanock, 2004) argue that 'skills' are not the same as 'attributes', and 'generic' may not necessarily equal 'transferable'. Such theoretical confusion will almost certainly have practical implications for the teaching and learning of graduate attributes.

Research (Barrie, 2005; De la Harpe, Radloff & Wyber, 2000) suggests that there is a functional link between academic conceptions about 'generic' attributes and their approach to learning and teaching. Such an approach may not provide the outcomes universities and their stakeholders are looking for. In this sense, as Barrie argues (2005), the rush to develop lists of graduate attributes 'put the cart before the horse'; before appropriate teaching, assessment and evaluative strategies are developed, we need to ask a more fundamental question:

> What are these things that universities call generic attributes? This is a more fundamental question than what combination of skills, attributes and knowledge should be included on the graduate 'shopping list': it is about the nature of things on the list, and the nature of the list itself (Barrie, 2006, p.215).

Barrie (2006) and others (for example, see Hager, Holland & Beckett, 2002; Moore, 2004) certainly make a valid point about the need for conceptual clarity. However, it is also important to acknowledge the danger of allowing long-standing theoretical disagreements to dominate the graduate attributes project, particularly if they serve as a barrier to university aspirations for curriculum change. The Australian Government itself has commented on what it sees as the negative effects of this complication; in the Australian context, the 'development of graduate attributes has shadowed the development and adoption of the key competencies within the vocational sector' (DEST, 2005, n.p). It contrasts this approach to that of the UK, where the concept, 'attribute' has been adopted in preference to 'skills', in an effort to 'register a broader notion of "graduateness", which encompasses knowledge, understanding, dispositions, attitudes and values, as well as skills' (DEST, 2005, n.p). Whatever the

Australian higher education sector settles on, we think it is important to remember the proposition that practice can sometimes serve to sharpen theoretical understanding.

Nonetheless, the fact that academic staff have different understandings of graduate attributes and their relation to disciplinary knowledge should be some cause for concern since any organisational change requires some measure of consensus. Barrie's research (2004; 2005) at one Australian university shows a wide variation in academics' conceptions about graduate attributes, from the most basic view, that attributes are a separate precursor to learning and should be addressed by an additional, remedial curriculum, to the most complex, that attributes 'sit at the very heart of discipline knowledge and learning' (2004, p.266). Ultimately, each of these understandings is based on different conceptions of the relationship between graduate attributes and discipline knowledge. Opinion regarding this crucial relationship is similarly divided among universities' learning and literacy experts (Chanock, 2004). According to Moore (2004), this group falls into two distinct camps: the 'generalists' and the 'specifists'. The generalists first came to the fore in the 1970s and believe that attributes are indeed generic, and can therefore be taught separately from content and applied to any discipline. As a leading proponent of the generalist approach, Ennis (1997) argues that the attribute of critical thinking is universal, so it can be taught independently as a set of cognitive processes then applied to any context. By contrast, specificists argue that attributes, such as the ability to think critically, cannot be separated from their disciplinary context. Knowledge is seen as fundamentally situated. From this perspective, critical thinking cannot be taught separately from a students' chosen discipline/s as a 'one-shot inoculation' of skill development (De la Harpe, Radloff & Wyber, 2000, p.233).

The debate regarding the nature of graduate attributes or skills has become more, rather than less fine-grained over time. There is disagreement even amongst those 'relativists' who sit in the middle of the generalist and specifist positions. Ballard and Clanchy (cited in Moore, 2004, p.14) argue that a generic attribute such as critical thinking needs to be learned contextually, but once learned, can be transferred to another context. Yet, more recently, Davies (2006) has argued that those on either side of the generalist/specifist divide must move beyond the 'fallacy of the false alternative' (p.179), by recognising the possibility of both general and specific attributes. For Davies, students should learn 'general skills [sic]' – 'the principles of good reasoning *simpliciter*', which can then be 'used and deployed in the service of the academic tribes' (p.179). However, it is difficult to see how the 'the principles of good reasoning *simpliciter*' can be taught in a context-free environment. For this reason, we find the specifist/relativist end of the graduate attribute spectrum to be more persuasive (Bath, Smith, Stein & Swann, 2004; Ballantyne, Lowe & Marshall, 2004; Christensen & Cuffe, 2002).

Accepting this position, however, opens up the challenge of conceptualising the relationship between graduate attributes and each particular disciplinary body of knowledge. For example, the term, 'critical thinking', is often used interchangeably with problem solving and decision-making to describe an attribute most universities desire for their graduates. Yet, as Marginson (as cited in Reid & Parker, 2002, p.21) points out, problem solving is treated differently in different disciplines. Humanities scholars are more likely to approach a problem with the intention of developing a deeper understanding of it; they will analyse or critically evaluate the problem, rather

than try to 'solve' it (Chanock, 2004). This approach would be quite foreign to management students who are routinely presented with case studies, which highlight problems or potential problems they might be required to solve in practice. Thus, business students will be more likely to see critical thinking or problem solving as key components of decision-making processes.

The relationship between these components and critical thinking highlights another problem for developers of graduate attributes. From a policy and planning perspective, it makes sense to deal with each identified attribute as a separate component. Yet as our prior discussion suggests, different attributes tend to develop in relation to one another (see Roberts & Mentowski, 2004). Further, graduate attributes will tend to develop in ways that accord with the conventions and norms of each discipline (Chanock, 2004; Moore, 2004; Reid & Parker, 2002). Consequently, those charged with implementation must balance policy driven concerns of quantification and categorisation with the awareness that for graduate attributes to be truly 'embedded' in curricula, knowledge and literacy need to be seen as inextricably linked (San Miguel, 1996, p. 31).

From this perspective, developing graduate attributes dovetails with idea of developing academic literacies because it enables students to participate appropriately in the 'discourse' of their chosen discipline (Kirkpatrick & Mulligan, 2002, p.74). It is in developing a self-reflexive awareness of disciplinary norms (Reid & Parker, 2002; Chanock, 2004) that students will be able to transfer what they have learned to other contexts in the future (Boud, 2000). Based on this interpretation, the explicit development of graduate attributes needs to be embedded into each course or subject and becomes, by extension, the responsibility of the subject specialist (Hattie as cited in De la Harpe, Radloff & Wyber, 2000, p. 233), albeit with the advice and support of learning specialists/developers.

Before this can happen, academic staff must come to some kind of consensus about this relationship. Yet is not always easy to clearly articulate, nor agree upon, what has been until now tacit knowledge. As subject specialists, academic staff often develop an intuitive, if not visceral, grasp of the way graduate attributes might manifest themselves within their own discipline. A case study reported by De la Harpe, Radloff & Wyber (2000) highlights the pitfalls of this tendency. A dispute among academic staff regarding graduate attribute requirements within the different disciplines of the Curtin Business School played a significant part in stalling their project to embed graduate attributes into their Program structures (De la Harpe, Radloff & Wyber, 2000, p. 235). While instances of disagreement between disciplines may be common (Barrie, 2005), academics within any one discipline may also struggle to articulate what graduate attributes mean within their disciplinary context. For example, Kirkpatrick and Mulligan (2002) report a lack of consensus about the nature of critical thinking within many disciplines in Australian universities, particularly within the disciplines of business, the health sciences and teaching.

Indeed, the meaningful articulation of graduate capabilities within a disciplinary context requires substantial consultation with a range of stakeholders, including employers, graduates, and disciplinary or subject experts. While Barrie (2006, p.218) reports that some universities advocate that their statements of graduate attributes should 'be interpreted in the context of the discipline' few faculties have risen to the

challenge. One exception is the Law Faculty at QUT (Christensen & Cuffe, 2002; Kift, 2002). Rather than 'simply selecting some inalienable graduate capabilities and append[ing] them to a unit or two' (Kift, 2002, n.p.) the faculty project team consulted employers and graduates, professional bodies, faculty, as well as various international studies in order to define the generic and discipline-specific capabilities, that taken together, describe the attributes and skills of a desirable Law graduate. However, as Kift (2002) points out, such an achievement requires significant support from university and faculty management as well as academic staff. Yet failure to conceptualise graduate attributes within particular disciplinary contexts has serious implications for those charged with implementing and assessing their development.

Pedagogical challenges

Many Australian academics have yet to develop clear strategies for developing and assessing attributes within their specific disciplinary contexts (Barrie, 2005; Bath, Smith, Stein & Swann, 2004; De la Harpe, Radloff & Wyber, 2000; Scoufis, 2000). Appropriately designed assessment that is self-directed, reflective and authentic is the cornerstone of graduate skill development (Kift, 2002; Luca & Oliver, 2002). Yet many academic staff continue to employ inappropriate, teacher-centred, content focused strategies in their classrooms, which in turn lead to poorer graduate outcomes for their students (De la Harpe, Radloff & Wyber, 2000). What is required is a shift in the curriculum from its, sometimes, exclusive focus on content to one that integrates content with process (De la Harpe, Radloff & Wyber, 2000, p.233; James, Lefoe & Hadi, 2004; Luca & Oliver, 2002). A focus on the 'how to', as well as the 'what' and the 'why' is student-centred since the teacher must begin from where the student is, clearly articulating their expectations of the students' learning at the level of each individual course.

Such a focus on process begs another series of questions: how do we conceptualise, assess and evaluate developmental milestones for each degree? This is because the acquisition of 'graduateness' is a developmental process, which needs to be approached with 'a sensible flavour of gradualism about people's cognitive capacities' (Butler & Rubinstein, 2004, p.327). The irony here is that while the graduate skills agenda focuses attention on outcomes, it has also 'opened up a particularly interesting pedagogical space' (James, Lefoe & Hadi, 2004, p.176), which requires a careful exploration of procedure or process. One way of bringing concerns for outcomes and process together would be to use a taxonomy, such as Bloom's Taxonomy of Educational Objectives (Bloom & Krathwohl, 1956), to describe increasingly complex learning outcomes in relation to graduate attributes. Bloom's classifications might be used as a useful foundation for a programmatic approach to learning development because they allow us to establish an upper and lower set of standards and criteria for achievement in each semester of study.

Because taxonomies such as Blooms are expressed as generic, developmental levels of student learning, academic staff will need to 'interpret' each level to reflect the specific norms, skills and required knowledge of their discipline at various stages in the degree program. An example of such interpretation in practice can be seen in Phillips and Bond's (2000) interpretation of Bigg's SOLO taxonomy to evaluate student responses to task, which assessed their ability to solve problems: a form of critical thinking that is valued in management. Assessment criteria and standards based on such an interpretation could enable identification and feedback regarding the

strengths and weaknesses in a students' development. However, adopting such an approach would almost certainly place unrealistic demands on cash-strapped universities, in terms of the time, expertise and staff development required. Indeed, conceptual confusion is only one factor in a much larger, more complicated landscape that includes: external pressures, coming from the sector's multiple stakeholders and internal pressures, relating to the university's management and staffing practices serve to further complicate the adoption of the graduate attributes agenda in Australia.

Complications arising from the university's external and internal environments

The first factor that impacts on the development of appropriate teaching and learning strategies is the increase in student numbers. The Australian Vice-Chancellor Committee (AVCC) vision for Australian higher education by 2020 is that more than 60 per cent of Australians will have completed some higher education (AVCC, 2003, p. 9). However, while student numbers in higher education have increased, the expenditure per student over the same period has decreased (AVCC, 2003, p.10). Increased student numbers makes the job of developing graduate attributes more difficult for a number of reasons. The first is the impact on program structures.

One response to increasing student enrolments has been the widespread adoption of horizontal and/or modular structures in degree programs, particularly in business (Kirkpatrick & Mulligan, 2002, p. 87) and the humanities. While this approach is seen as a pragmatic solution to the problem of managing large student cohorts, the lack of a vertical structure with pre-requisites makes it difficult to provide students with opportunities to develop their attributes as they progress through their degrees. Furthermore, the lack of a vertical structure poses a number of risks for course convenors. In Kirkpatrick and Mulligan's study (2002), for example, one business lecturer complained that 'if you make the assessments too difficult [the students] will go somewhere else' (p.87). Apart from inherent risk of students perceiving one's course to be more challenging than other offerings, there is the potential for overlap and repetition. With fewer core courses and fewer electives, many second and third year students will enrol in core first year courses, together with students at all levels from other faculties. Thus, a 'first year' cohort will contain many students who have already developed well beyond the levels expected of students commencing their studies. This trend towards program modularization has the potential to impact negatively on the development of student learning across their degree program both in terms of specific disciplinary expertise, and in terms of graduate attributes.

Another institutional response to large student numbers and decreased government funding has been the development of cross-campus courses, using multiple study modes, which potentially service thousands of students from a range of backgrounds. Academic staff who teach into and coordinate these courses are faced not just with the challenge of delivering quality learning outcomes across multiple campuses, but also with the prospect of managing the large teaching teams required for thousands of students. While current research (Kift, 2002) indicates that formative assessment tasks and small group teaching are important components of developing graduate attributes, increasing student numbers and tight budgets have led to a decrease in small group teaching (Andersen, Johnson & Saha, 2002, p.28). In this increasingly challenging context, innovative solutions are required to ensure acceptable student learning outcomes. Yet, under such circumstances, it is all too easy to adopt what Schapper

and Mayson (2004) refer to as a 'Taylorist' approach to assessment. Traditional time efficient modes of assessment, such as exams, have a greater potential to promote surface learning. However, for some, this is an acceptable payoff in return for avoiding the long hours and additional management time required for marking, coordinating marking teams, and moderating written assignments when large numbers of students are involved.

Another factor that works against the graduate attributes project is the casualisation of academic staff. The paradox for faculty wishing to introduce changes to the way disciplines teach is that while casuals are the 'tenuous periphery' of the workforce (Kimber, 2003), they have been made central to the delivery of quality learning and teaching outcomes for universities. Our own work in embedding graduate skills into existing first year courses has demonstrated the centrality of casual staff to achieving desired learning outcomes, particularly in the context of tutorial teaching (see also Kift, 2003). This is not to say that casual academic staff necessarily lack experience or commitment. However, casual employment does create a context of high staff turnover, lack of ownership and lack of institutional support. Therefore the increasing use of causal teaching staff must inevitably impact on teaching quality. If tutors possess neither the willingness nor the skills to develop a focus on process in their teaching, their casual status makes it difficult to demand or to expect such changes of them. Without the funding available for sessional tutors to attend staff development programs, many permanent staff are reluctant to ask them to commit to a process of professional development. Ironically, the relatively downtrodden status of casual staff diminishes the power of permanent staff to affect change. Thus, the dilemmas inherent in casualisation fall back on permanent academic staff themselves.

The imposition of additional time and management burdens related to the development of graduate attributes will, therefore, require reciprocation in the form of incentives. As any good manager knows: 'the things that get rewarded get done' (LeBoeuf, as cited in Cannon, 2000, p.82). However, rewarding staff for their contribution to teaching and learning will be highly problematic in an institutional context where, despite rhetorical changes, promotional and payment systems have yet to convincingly reward teaching equally to research performance. Current university promotion practices continue to define research achievement and outcomes as the basis for a successful academic career (McGrail, Rickard & Jones, 2006). While teaching demands have increased in line with massification, the demands on academic staff to publish have also increased substantially (Andersen, Johnson & Saha, 2002, pp.67-72).

One way that universities have attempted to address the imbalance between research and teaching is through the establishment of award and other recognition programmes that celebrate the excellence of individual academics, and academic teams, for their teaching. The argument for rewarding quality teaching in this way is compelling: there is a functional link between teachers' approaches to teaching, students' approaches to learning, and learning outcomes (Trigwell & Prosser, 1998). Teacher-focussed academics are likely to employ strategies that work against independent learning, while those who are focussed on student learning are more likely to set up learning environments that foster the development of graduate attributes, with tasks that are self-directed, reflective and relevant to students (Luca & Oliver, 2002). The criteria for the Carrick individual teaching awards reflect many of the qualities

associated with a student-centred approach (Carrick Institute for Learning and Teaching, 2006).

Rewarding academics who meet such criteria could be a step in the right direction, particularly if such excellent teaching practices are taken up by other academic staff. However, best practice models may encourage a passive, skills deficit model of staff development (Bryant, Scoufis & Cheers, 1999). In addition, the star qualities of award winners may seem out of reach, or irrelevant to many time-poor academics struggling at the coal face of teaching, particularly those who teach thousands of students in large, diverse first year core courses. Yet, because of their introductory status and large cohorts, it is these first year core courses, which are ideal sites for beginning to develop graduate attributes. Finally, there is the problem of staff perceptions regarding the relative importance of teaching; individual teaching awards for excellence will not, in themselves, change perceptions regarding the importance of research in relation to teaching (Jackson 2006: 271) or compensate for a lack of institutional support and reward.

For academic staff faced with conflicting pressures for research and teaching outcomes, pragmatism may be a more effective driver of large-scale change than teaching awards (Bryant, Soufis & Cheers, 1999). A pragmatic approach to raising the profile of teaching in universities should offer staff the opportunity to respond to specific context-specific, learning and teaching issues they face, by drawing on existing strategies developed by their colleagues, underpinned by staff development strategies where required. Our own experience with such issue-focused staff development affirms this observation. Our colleagues value practical, hands-on workshops that focus on specific teaching issues more than generic or theoretical approaches to staff development.

How we reward and foster quality teaching is not the only issue however; what we reward also matters. In particular, we need to ask why teaching awards, such as those offered by the Carrick Institute, reward teaching performance over student learning outcomes. And why this same focus drives many of the Australian university teaching and course evaluation regimes that we have seen to date (see also Cannon, 2000). On the one hand, we have universities publishing policy statements regarding the kinds of attributes they expect their students to develop by graduation, while on the other hand we conduct evaluations, which focus solely on what the teacher brings to the learning environment. This represents a possible 'mismatch between the things we seek and the things, we support, recognise and reward' (Cannon, 2000, p.84). After all, it is one thing to develop teaching strategies that are *likely* to produce quality graduate outcomes; it is quite another to *demonstrate* one's students have attained them.

Given the possible tension between student *preferences* and student *learning outcomes*, the current focus of evaluations and rewards has the potential to undermine the graduate attributes agenda in Australia. Our experience indicates that even where learning outcomes are generally positive, courses, which are designed to develop particular graduate attributes, are not universally popular with students. Some students value process-focused teaching around their assessment, which offers explicit explanation, modelling and opportunities for practice before submission. However, others are more critical, arguing that such teaching practices are unnecessary.

Polarised student responses to courses that explicitly target graduate attributes have been reported by other practitioners (Cartwright & Noone, 2000; Kift, 2002).

Basing learning and teaching evaluations primarily on student preferences may also discourage innovative teaching practices, which challenge students to develop desirable graduate attributes in favour of more popular strategies. The tension between student preferences and desirable learning outcomes is illustrated by Karns' (2005) study of marketing students' perceptions of assessment, which found that, 'While students may prefer less challenging, more enjoyable and more real-world learning activities…[they] see added value in several relatively challenging learning activities' (p.170). In addition, asking students to comment on the practices of others also works against their attainment of learning outcomes in a different way. University evaluations that focus on the teacher do 'not allow [students] to communicate their views on how they themselves are contributing to their learning (Devlin, 2002, p.290). Such a practice runs counter to another significant university aspiration: the creation of lifelong learners who are capable of judging their own actions (Boud, 2000).

Although the performance of teachers and the perceptions of students are, and should remain two important indicators of a university's ability to respond to the graduate attributes agenda, they cannot, by their very definition, serve as indicators of student learning outcomes. As Parry and Debowski (2004, p.13) wisely point out, a *systematic* evaluation of individual teaching and courses would require a more comprehensive approach than we take at present: 'The answer, of course, is that [such a systematic approach] comprises whatever it takes to demonstrate that the institution is achieving desirable learning outcomes'.

How and what to evaluate are just two interlinked considerations in a complex program of change. Adopting an holistic, embedded approach to the development and evaluation of graduate skills takes time and considerable skill, both at the level of strategic planning, and at the coalface of classroom teaching. The investment of time, good will and resources required is great, yet returns are uncertain. This approach may well represent a viable response to the vexed problem of assessing 'graduateness', yet it may also ultimately be undermined by government initiatives to resolve the problem, such as the Graduate Skills Test. As commentators (Chanock, Clerehan, Moore & Prince, 2004; Barrow, 2004) have warned, the controversial Graduate Skills Test proposed by DEST is problematic on two counts, firstly, as a generic, psychometric instrument it does not highlight disciplinary strengths, and secondly, it may well encourage teaching for the test. While it may appear that universities face a lose-lose situation, adopting a proactive approach must surely leave universities in a stronger position from which they play a more central, less reactive role in shaping the graduate attributes agenda.

Conclusion

It should by now be clear that adopting an holistic, embedded model for the development of graduate attributes requires a whole-of-university approach to planning and implementation. It is logical that each discipline be responsible for conceptualising, mapping, designing, implementing and assessing graduate attributes. It will also be their responsibility to consider how they will reward academic staff

who actively engage in teaching graduate attributes, and how they will measure success of the project. Yet all of these responsibilities are made more difficult by environmental factors over which disciplines and faculty exercise little control. Each of the factors explored here has the potential to derail attempts by academic and learning development staff to embed graduate attributes within university curricula. In combination, they represent a serious but not impossible challenge. With the knowledge society now in full flower, the graduate attributes project is, increasingly, an urgent one. Despite the urgency, scholarship and practice in this area continue to run well behind the aspirations of universities and their stakeholders. Given the complexity of the task, as we have outlined it here, there should perhaps be greater recognition that progress in graduate attributes will be justifiably slow as a result, or require more resources and support, coupled with organisational change, than first anticipated.

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